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Department of
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Federal Grain
Inspection
Service

April 1986

U.S. Export Corn Quality, 1985

Second Calendar Year Report

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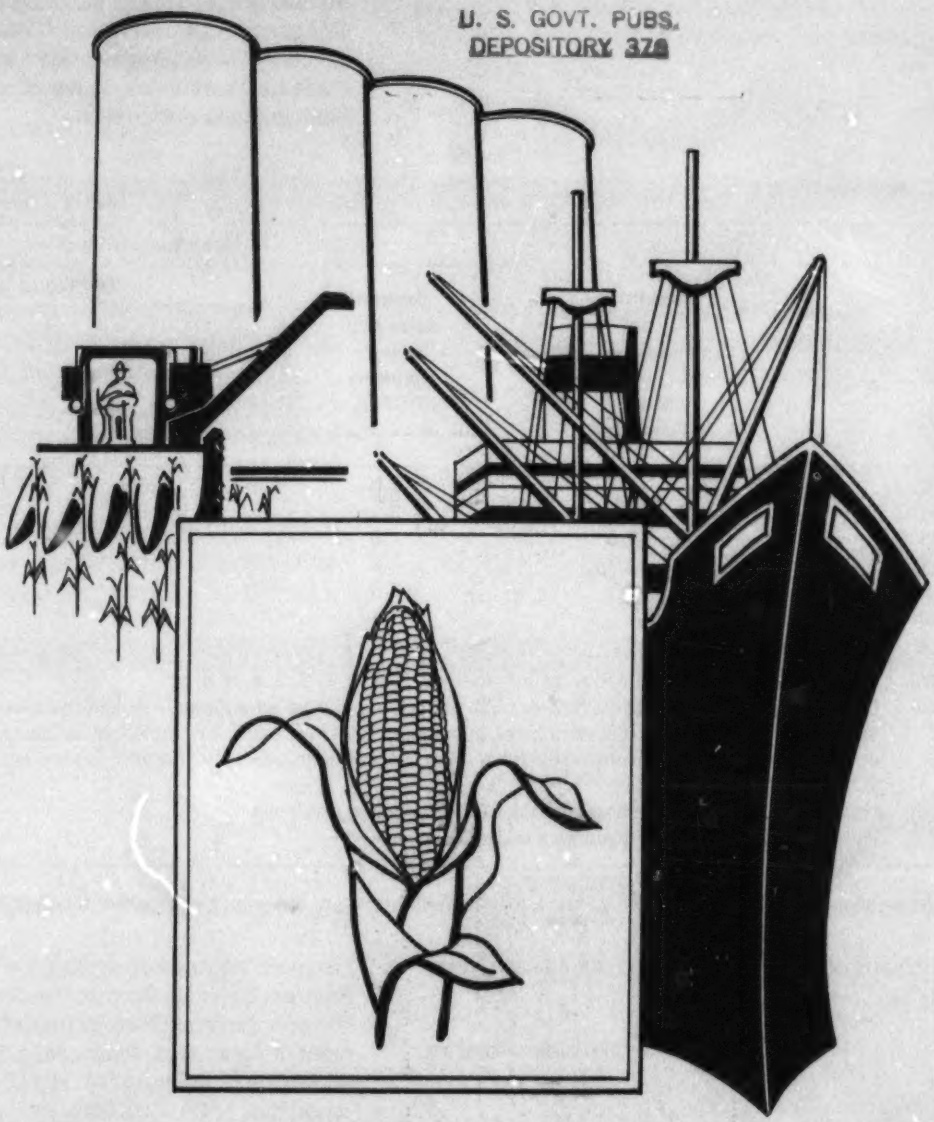

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Corn Grades and Grade Requirements

Corn is divided into three classes: Yellow Corn, White Corn, and Mixed Corn. There are no subclasses of corn. Yellow Corn is the class most often shipped for export from the United States. Each class of corn is divided into five U.S. numerical grades and U.S. Sample grade. Special grades are provided to emphasize special qualities or conditions affecting the value of the corn. These special grades are made a part of the grade designation but do not affect the numerical or Sample grade designation.

U.S. Standards for Corn*

Grade	Minimum test weight per bushel (pounds)	Maximum limits of —		
		Broken corn and foreign material (BCFM)	Damaged kernels	
			Total	Heat-damaged kernels
		(percent)		
U.S. No. 1	56.0	2.0	3.0	0.1
U.S. No. 2	54.0	3.0	5.0	0.2
U.S. No. 3	52.0	4.0	7.0	0.5
U.S. No. 4	49.0	5.0	10.0	1.0
U.S. No. 5	46.0	7.0	15.0	3.0

U.S. Sample grade:

U.S. Sample grade shall be corn which —

(a) Does not meet the requirements for the grades U.S. Nos. 1, 2, 3, 4, or 5; or

(b) In a 1,000 gram sample, contains 8 or more stones which have an aggregate weight in excess of 0.20 percent of the sample weight, 2 or more pieces of glass, 3 or more crotalaria seeds, 2 or more castor beans, 8 or more cockleburs, 4 or more particles of an unknown substance(s) or a commonly recognized harmful or toxic substance(s), or animal filth in excess of 0.20 percent; or

(c) Has a musty, sour, or commercially objectionable foreign odor; or

(d) Is heating or otherwise of distinctly low quality.

* As of September 9, 1985, moisture is no longer a grading factor for corn, although it is required to be shown on the certificate.

For definitions of grading factors and other terms, refer to page 7.

For more information, contact the Administrative and Program Services Branch, Resources Management Division, Federal Grain Inspection Service,U.S. Department of Agriculture, Washington, D.C. 20250; telephone (202) 382-1741. For additional copies of this report, call (202) 475-3367.

Background

There has been a growing industry-wide concern regarding the quality of U.S. grain exports in the past few years. To truly ascertain U.S. grain export quality, the U.S. Department of Agriculture's Federal Grain Inspection Service began analyzing export grain data. The first comprehensive report was for calendar year 1984. In this 1985 study, 1,516 export corn lots were analyzed. The data represented 92 percent of the total 1,721 million bushels inspected for export during calendar year 1985. No analysis was made of the 2 percent exports from the interior by truck or rail.

For comparison purposes, we have included 1984 export corn quality results and broken down the grade factor averages for U.S. No. 2 and No. 3. Further, a comparison by Port Region of grading factors for 1984 and 1985 is shown for No. 2 and No. 3.

Corn represented 48 percent of the total 3.55 billion bushels of grain inspected for export in 1985. Shipments from the Gulf accounted for 63 percent of the total corn exports.

Conclusions

1. Twenty-three percent of the corn inspected for 1985 export was U.S. No. 2 or better and 77 percent was U.S. No. 3. In 1984, 26 percent was U.S. No. 2 or better and 73 percent was U.S No. 3.

2. A comparison of 1985 and 1984 grade factors showed that 1985 corn exports had improved test weight (+0.2 lbs.), had less broken corn and foreign material (−0.1 percent) and damage (−1.1 percent), but experienced greater moisture (+0.6 percent).

3. The factor improvements were the most significant in the Atlantic export area.

Table 1. Summary of Export Corn Quality, 1984 and 1985

Factor	Grade	Grade Limit	1984[1] Average	1985[1] Average	1985 Range
Test weight per bushel	U.S. No. 2	54.0	55.7	55.7	54.0 - 59.0
	U.S. No. 3	52.0	55.7	55.9	52.0 - 58.7
	All Lots		55.7	55.9	51.5 - 59.0
Moisture	U.S. No. 2	15.5	14.0	14.4	11.7 - 15.5
	U.S. No. 3	17.5	14.1	14.7	13.0 - 15.5
	All Lots		14.1	14.7	11.7 - 15.5
BCFM	U.S. No. 2	3.0	2.7	2.8	0.7 - 3.0
	U.S. No. 3	4.0	3.7	3.6	0.7 - 4.0
	All Lots		3.5	3.4	0.7 - 9.8
Damaged kernels (total)	U.S. No. 2	5.0	3.6	2.9	0.3 - 4.7
	U.S. No. 3	7.0	4.4	3.2	0.6 - 6.8
	All Lots		4.2	3.1	0.3 - 7.6
Heat-damaged kernels	U.S. No. 2	0.2	0.0	0.0	0.0 - 0.2
	U.S. No. 3	0.5	0.0	0.0	0.0 - 0.2
	All Lots		0.0	0.0	0.0 - 0.3

[1] The 1984 results are based on the grades of 3 lots of U.S. No. 1, 512 lots of U.S. No. 2, 1124 lots of U.S. No. 3, 8 lots of U.S. No. 4, 12 lots of U.S. No. 5, and 16 lots of U.S. Sample grade.

[2] The 1985 results are based on the grades of 1 lot of U.S. No. 1, 406 lots of U.S. No. 2, 1097 lots of U.S. No. 3, 5 lots of U.S. No. 4, 4 lots of U.S. No. 5, and 3 lots of U.S. Sample grade.

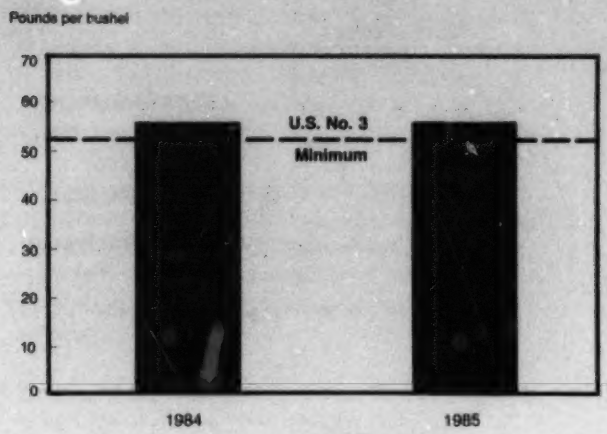
Table 2. Summary of Export U.S. No. 2 Corn Quality, 1984 and 1985
Factor Averages by Port Region

	Atlantic		Gulf		Lakes		Pacific		U.S.	
Factor and Volume	1984	1985	1984	1985	1984	1985	1984	1985	1984	1985
Million bushels	51	19	242	192	15	7	95	114	403	332
Test weight per bushel	55.5	56.5	56.5	56.0	55.4	55.6	55.3	55.2	55.7	55.7
Moisture	14.5	14.5	14.0	14.6	13.8	14.2	13.7	14.2	14.0	14.4
BCFM	2.7	2.7	2.7	2.8	2.7	2.4	2.8	2.9	2.7	2.8
Damaged kernels (total)	3.3	2.5	3.8	2.9	3.3	3.6	3.2	2.8	3.6	2.9
Heat damaged kernels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

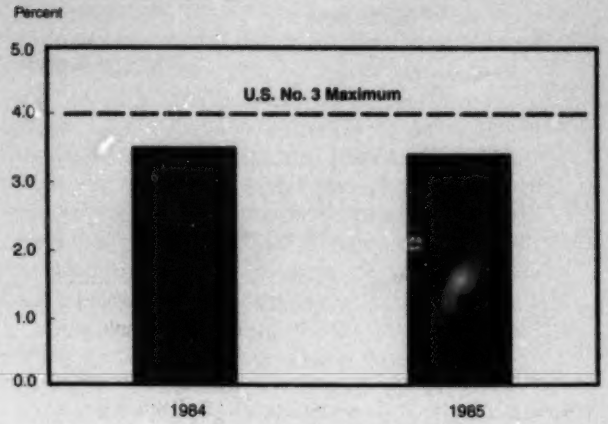
Table 3. Summary of Export U.S. No. 3 Corn Quality, 1984 and 1985
Factor Averages by Port Region

	Atlantic		Gulf		Lakes		Pacific		U.S.	
Factor and Volume	1984	1985	1984	1985	1984	1985	1984	1985	1984	1985
Million bushels	81	128	889	870	63	75	207	173	1239	1246
Test weight per bushel	55.7	56.8	55.9	56.0	55.3	55.1	55.4	55.3	55.7	55.9
Moisture	15.0	14.9	14.1	14.8	14.4	14.7	13.7	14.6	14.1	14.7
BCFM	3.7	3.4	3.7	3.6	3.6	3.6	3.6	3.7	3.7	3.6
Damaged kernels (total)	4.0	2.6	4.6	3.3	3.3	3.2	4.0	3.1	4.4	3.2
Heat damaged kernels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

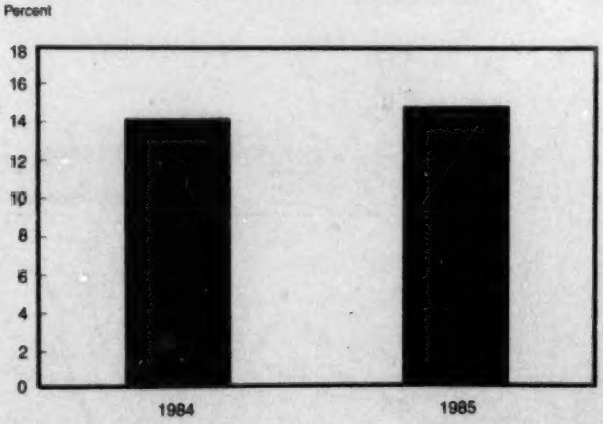
Corn — Average Test Weight
1984 — vs — 1985



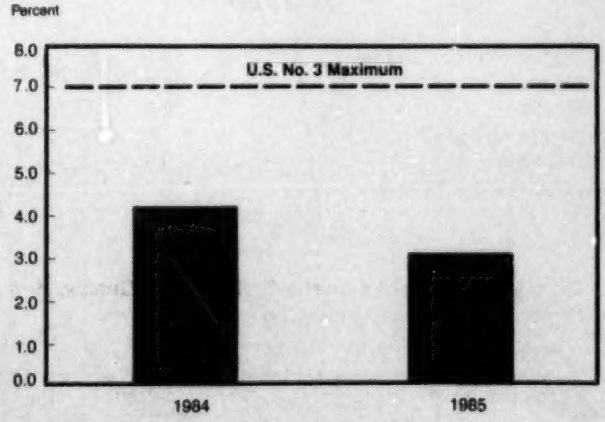
Corn — Average BCFM
1984 —vs— 1985



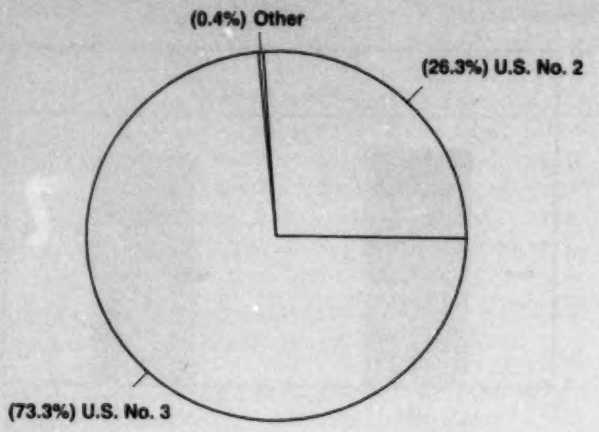
Corn — Average Moisture
1984 —vs— 1985



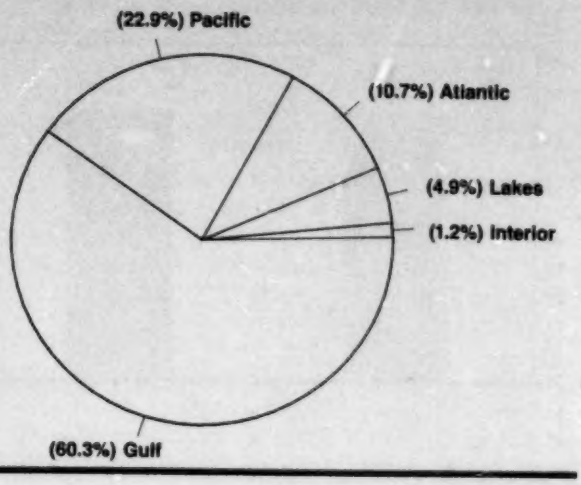
Corn — Average Damaged Kernels Total
1984 —vs— 1985



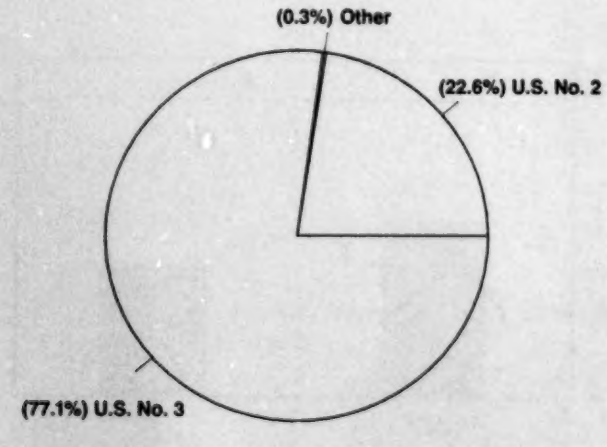
1984 Corn Exports
Grade Distribution



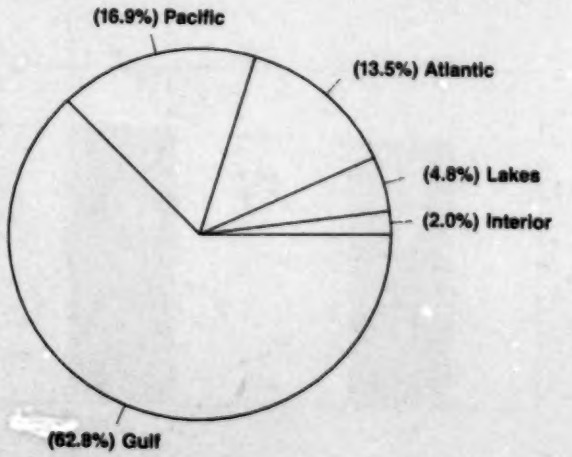
Corn Exports by Region — 1984



1985 Corn Exports
Grade Distribution



Corn Exports by Region — 1985



Definitions

- **Test weight** per bushel is a determination of the number of pounds of corn in a Winchester bushel.

- **Moisture** is the water content of corn as determined by an approved electronic moisture meter. Effective September 9, 1985, the percentage of moisture in a sample does not affect the numerical grade.

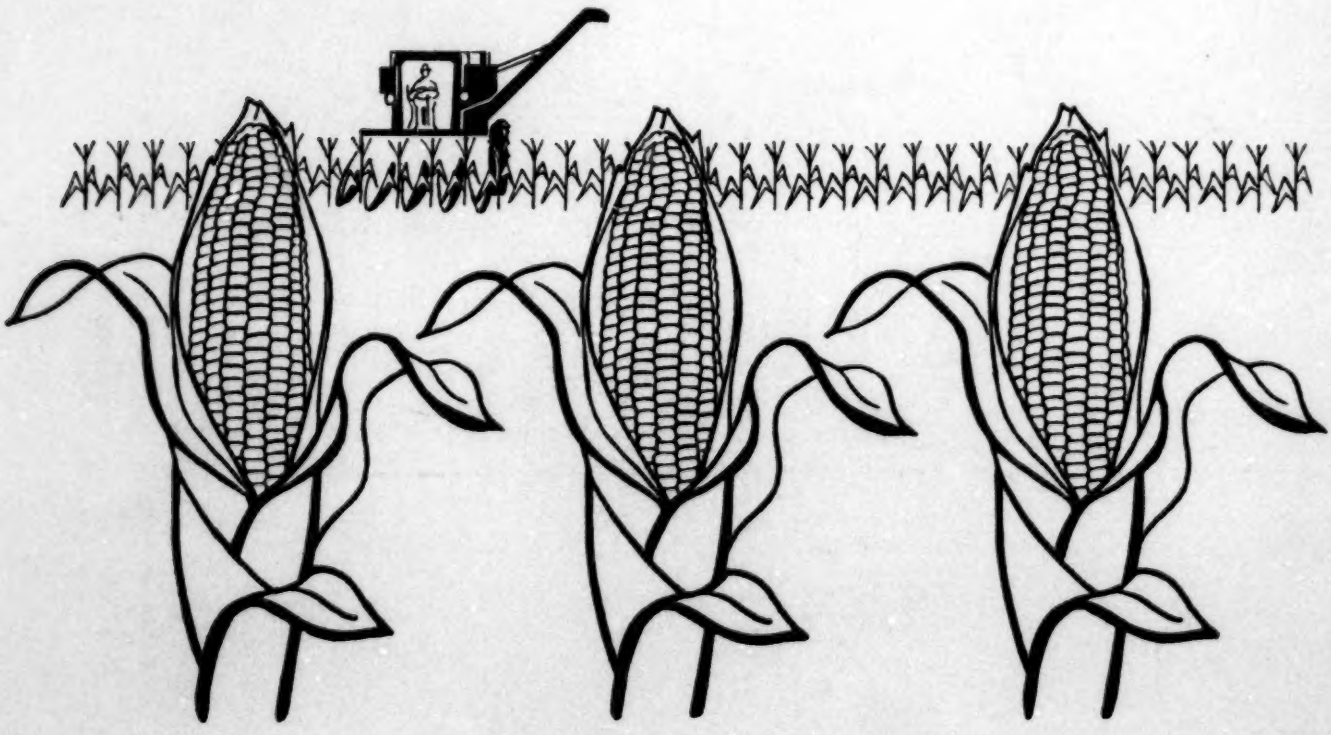
- **Broken corn and foreign material (BCFM)** is composed of kernels and pieces of kernels of corn and all matter other than corn which will pass readily through a 12/64-inch sieve, and all matter other than corn which remains in the sieved sample.

- **Damaged kernels (total)** are kernels and pieces of kernels of corn which are heat damaged sprouting, frost, discloration, weather, mold, disease, or other types of damage.

- **Heat-damaged kernels** are kernels and pieces of corn kernels which have been materially discolored and damaged by heat.

- **Grade** is determined by analyzing the physical and biological factors present in the sample. Limits for the grading factors are established for each numerical and Sample grade. Grades range from U.S. No. 1 (highest) to U.S. Sample grade (lowest). When a particular grade is cited in this report, it includes lots certificated at that grade plus lots certificated with the "or better" designation. For example, U.S. No. 2 includes lots certificated as "U.S. No. 2" and lots certificated as "U.S. No. 2 or better." Factors that exceed the established limits lower the numerical grade, except for test weight where established limits represent minimum requirements for each grade.

- **Note:** All 1984 and 1985 average factor values contained in this report have been calculated by weighting individual export lot factor averages by volume. Average factor values reported in the 1984 U.S. Export Corn Quality report were not weighted by volume. This fact accounts for some differences between factor results reported in that report and 1984 factor results included in this report.



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